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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,216	12/12/2003	Yezdi Dordi	LAM2P458	1787

25920 7590 08/12/2005

MARTINE PENILLA & GENCARELLA, LLP
710 LAKEWAY DRIVE
SUITE 200
SUNNYVALE, CA 94085

EXAMINER

NGUYEN, THANH T

ART UNIT PAPER NUMBER

2813

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/735,216	DORDI ET AL.	
	Examiner	Art Unit	
	Thanh T. Nguyen	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) 1-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/6/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group II, claims 23-52 in the reply filed on 6/6/05 is acknowledged.

Information Disclosure Statement

The information disclosure statement filed 6/6/05 has been considered.

Oath/Declaration

Oath/Declaration filed on 12/12/05 has been considered.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

In pages 2, line 9, the application number is missing. It is suggested to provide the application number.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 23-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Homma et al. (U.S. Patent No. 2003/0098241).

Referring to figures 2a-2C, Homma et al. teaches an apparatus for depositing a material on a surface of a wafer, comprising:

a tank defined by an enclosing wall and a bottom, the tank being configured to contain an electroless plating solution (25, see figure 2C);

wafer support (16) structure disposed within the tank being configured to contain an electroless plating solution (see figure 2A);

a wafer support structure disposed within the tank, the wafer support structure being configured to support a wafer at a submerged position within the electroless plating solution to be contained within the tank (see figures 2a-2C); and

a radiant energy source disposed above the wafer support structure, the radiant energy source being oriented to direct radiant energy toward the wafer to be supported at the submerged position within the electroless plating solution (see paragraphs 34, 48).

Regarding to claim 24. the radiant energy source is configured to generate radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of

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the wafer upon which the radiant energy will be incident (see paragraphs 34, 48-49).

Regarding to claim 25. the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer (see paragraphs 34, 48-49).

Regarding to claim 26. wherein the radiant energy source is stationary (see paragraphs 34, 48-49).

Regarding to claim 27. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to collimate the radiant energy, the radiant energy source being further configured to be scanned over the surface of the wafer (see paragraphs 34, 48-49).

Regarding to claim 28. An apparatus for depositing a material on a surface of a wafer wherein the wafer support structure is configured to oscillate the wafer (rotate, see figure 2a, paragraph# 12, 30, 48)

Regarding to claim 29. An apparatus for depositing a material on a surface of a wafer, further comprising:

an inlet for supplying the electroless plating solution to the tank (17/21, see figure 2b/2c);
and

an outlet for removing the electroless plating solution from the tank (26, see figure 2c).

regarding to claim 30. An apparatus for depositing a material on a surface of a wafer, further comprising:

a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the tank (see paragraph# 32).

31. An apparatus for depositing a material on a surface of a wafer, comprising:

a vessel defined by a top, a bottom, and an enclosing wall, the vessel being configured to contain an electroless plating solution(25, see figure 2C);

a wafer support structure disposed within the vessel, the wafer support structure being configured to support a wafer at a position within the vessel(16, see figure 2A); and

a radiant energy source disposed above the wafer support structure, the radiant energy source being oriented to direct radiant energy toward the wafer to be supported within the vessel(see paragraphs 34, 48).

Regarding to claim 32. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is disposed outside the vessel, the vessel being composed of a material capable of transmitting radiant energy emitted from the radiant energy source to an interior of the vessel(see paragraphs 34, 48).

Regarding to claim 33. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is disposed within the vessel(see paragraphs 32, 48-49).

Regarding to claim 34. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to generate radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of the wafer upon which the radiant energy will be incident (see paragraphs 34, 48-49).

Regarding to claim 35. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer(see paragraphs 34, 48-49).

Regarding to claim 36. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is stationary (see paragraphs 32, 34, 48).

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Regarding to claim 37. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to collimate the radiant energy, the radiant energy source being further configured to be scanned over the surface of the wafer.

Regarding to claim 38. An apparatus for depositing a material on a surface of a wafer, wherein the wafer support structure is configured to oscillate the wafer (rotate, see figure 2a, paragraph# 12, 30, 48).

Regarding to claim 39. An apparatus for depositing a material on a surface of a wafer, further comprising:

a pressure control capable of controlling a pressure of the electroless plating solution to be contained within the vessel (see paragraphs 12, 30, 42).

Regarding to claim 40. An apparatus for depositing a material on a surface of a wafer, further comprising:

an inlet for supplying the electroless plating solution to the vessel (21, see figure 2C); and

an outlet for removing the electroless plating solution from the vessel (26, see figure 2C).

Regarding to claim 41. An apparatus for depositing a material on a surface of a wafer, further comprising:

a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the vessel (see paragraph# 32).

Regarding to claim 42. An apparatus for depositing a material on a surface of a wafer, comprising:

a tank defined by an enclosing wall and a bottom, the tank being configured to contain an electroless plating solution;

a wafer holder configured to dip a wafer into the electroless plating solution to be contained within the tank, the wafer holder further configured to remove the wafer from the electroless plating solution to be contained within the tank; and

a radiant energy source disposed above the electroless plating solution to be contained within the tank, the radiant energy source being oriented to direct radiant energy toward the wafer upon removal of the wafer from the electroless plating solution to be contained within the tank.

Regarding to claim 43. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to generate radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of the wafer upon which the radiant energy will be incident.

Regarding to claim 44. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer.

Regarding to claim 45. An apparatus for depositing a material on a surface of a wafer, further comprising:

an inlet for supplying the electroless plating solution to the tank (21, see figure 2C); and

an outlet for removing the electroless plating solution from the tank (26, see figure 2C).

Regarding to claim 46. An apparatus for depositing a material on a surface of a wafer, further comprising:

a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the tank (see paragraph# 32).

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Regarding to claim 47. An apparatus for depositing a material on a surface of a wafer, comprising:

a tank defined by an enclosing wall and a bottom, the tank being configured to contain an electroless plating solution (25, see figures 2a-2C),

a wafer holder configured to rotate a portion of the wafer through the electroless plating solution to be contained within the tank (16, see figure 2a) ; and

a radiant energy source disposed above the electroless plating solution to be contained within the tank, the radiant energy source being oriented to direct radiant energy toward the portion of the wafer upon rotation out of the electroless plating solution to be contained within the tank(see paragraphs 34, 48-49).

Regarding to claim 48. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to generate radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of the wafer upon which the radiant energy will be incident(see paragraphs 34, 48-49).

Regarding to claim 49. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer(see paragraphs 34, 48-49).

Regarding to claim 50. An apparatus for depositing a material on a surface of a wafer, further comprising:

an inlet for supplying the electroless plating solution to the tank (21, see figure 2C); and

an outlet for removing the electroless plating solution from the tank (25, see figure 2C).

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Regarding to claim 51. An apparatus for depositing a material on a surface of a wafer, further comprising:

a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the tank(see paragraph# 32).

Regarding to claim 52. An apparatus for depositing a material on a surface of a wafer, comprising:

a tank defined by an enclosing wall and a bottom, the tank being configured to contain an electroless plating solution (25, see figure 2C),

a wafer support (16, carrier, see figurer 2a) structure disposed within the tank, the wafer support structure being configured to support a wafer at a submerged position within the electroless plating solution to be contained within the tank (see figures 2a-2c); and

a radiant energy source disposed within the wafer support structure, the radiant energy source being oriented to direct radiant energy toward a bottom surface of the wafer to be supported at the submerged position within the electroless plating solution, the radiant energy being capable of traversing through the wafer to heat a material present on a top surface of the wafer (see paragraphs 34, 48-49).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (571) 272-1695, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 6:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (571) 272-1702. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://paired.uspto.gov>. Should you have questions on access to thy Private PAIR system, contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thanh', with a long, sweeping horizontal stroke extending to the left.

Thanh Nguyen
Patent Examiner
Patent Examining Group 2800

TTN